

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

POLYCHAETES FROM MONTEREY BAY.

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The small collection of annelids listed below was made by the writer in July of 1909 incidentally to other work. The material was secured at or near Pacific Grove along shore or at only moderate depths. Several of the records are new for the locality and five of the species have seemingly not been described before. The types of the new forms are deposited in the Museum of Comparative Zoology at Cambridge.

AMPHINOMIDÆ.

1. **Eurythoe pauper** (Grube).

Amphinome paupera, Vid. meddel, naturh-Foren. Kjoben., 1856, p. 52.
Eurythoe californica Johnson, Proc. Cal. acad. sci., ser. 3, zool. 1, 1897, p. 159.

Numerous specimens of this species which is widespread on the Pacific coast of the Americas.

POLYNOIDÆ.

2. **Halosydna insignis** (Baird).

Lepidonotus insignis Baird, Proc. zool. soc. London, 1863, p. 106.
Abundant material of this common species, many being of the melanistic type.

3. **Halosydna californica** (Johnson).

Polynoe reticulata Johnson, Proc. Cal. acad. sci.; ser. 3, zool. 1, 1897, p. 170, pp. 7, f. 32, 41-41a and pl. 8, f. 47-47b.
Polynoe californica Johnson, Proc. Boston soc. nat. hist., 1901, p. 387.

4. **Harmothoe imbricata** (Linné).

Approdita imbricata Linné, Syst. nat., ed. 12, 1766, p. 1084.

5. **Lepidonotus coeloris** Moore.

Proc. acad. sci. Phil., 1903, p. 412, pl. 23, f. 12.

SYLLIDÆ.

6. **Syllis alternata** Moore.

Proc. acad. sci. Phil., 1908, p. 323.

One specimen.

NEREIDÆ.

7. **Nereis procera** Ehlers.

Die Borstenwürmer, 1868, p. 557, pl. 23, f. 2.

8. **Nereis mediator** Chamberlin.

Pomona coll. journ. ent. and zool., 1919, 11.

A species previously known from Laguna Beach and San Diego, Cal.

9. **Nereis mendocinana** Chamberlin.

Previously known from Mendocino, Cal.

10. **Nereis (Neanthes) monterea**, sp. nov.

Apparently the only species thus far known from the Pacific Coast in which all areas of the proboscis are armed and of the *Neanthes* type. In area I a single conical tooth which is very much stouter than those of other areas of the maxillary ring. On each area II in the type are six denticles in three transverse rows, the arrangement, beginning with the distal series, being 1, 2, 3. On III are numerous denticles in typically four transverse series; the denticles of the two middle series obviously stouter than those of the others; example of arrangement, 3, 4, 9, 9. Denticles of IV also numerous, in a patch elongate in a longitudinal direction, typically in five series, with five denticles in each. A single stout tooth like that of I in area V. In VI a still larger conical tooth which is usually compressed in the distoproximal direction, plate-like. Denticles of VII and VIII forming a continuous band across sides and ventral region of ring, the band a single series at sides but composed of two or three denticles below, the denticles much larger than those of the maxillary ring excepting that of I. Prosthomium in length about equalling the first two segments together, a little longer than width across base; posterior oculiferous region subquadrate, broader than the longer anterior region, which is more depressed, flatter, and is separated from the basal by a transverse depression, its anterior end convex. Tentacles separated by about their radius, conical, short, less than half the length of prostomium and often not more than a third. Anterior eyes a little longer than the posterior, from which well separated, and a little farther apart. Palpi very stout, outline of the two joints smoothly continuous, the terminal one short, strongly rounded, hemispherical. Peristomium about once and a half the length of II, much longer below, on sides and ventrally crossed by numerous oblique furrows. Dorsal

posterior tentacular cirri the longest, but these reaching only to III. In anterior parapodia the lobes are thick and notably rounded, particularly those of the notopodia, the neuropodial subsetigerous lobe smaller than the two notopodial lobes and more narrowed distad, less hemispherical. In passing caudad the notopodial lobes become more elongate and more conically pointed with notocirri still dorsal in position. In continuing caudad the dorsal notopodial lobe becomes still more elongate and its notocirrus shifts toward the tip, leaving beyond its base only a short, finger-like process. The neuropodial lobe in the anterior parapodia is very stout like the notopodial lobes; but in going caudad it becomes notably reduced. Neurocirrus attached at base of neuropodium, where there is a conspicuous transverse swelling, subulate, surpassing the neuropodial lobe. Setae of usual general types. Anal cirri subulate, moderate, equaling the last six or seven somites in length.

Number of somites near 130.

Length up to 140 mm.; greatest width, exclusive of parapodia, up to 7 mm.

11. *Nereis agassizi* Ehlers.

Die Borstenwürmer, 1868, p. 542, pl. 23, f. 1.

LEODICIDÆ.

12. *Marphysa stylobranchiata* Moore.

Proc. acad. sci. Phil., 1909, p. 249, pl. 7, f. 8-12.

Many specimens.

13. *Leodice enteles*, sp. nov.

In this species the branchiæ begin either on VIII, as most commonly, or on IX as single terete filaments or sometimes as two, either on one side only or on both. On the next segment two filaments, and on several succeeding ones three, the number increasing in going caudad to a maximum of four, or five, counting the shorter continuation of the basal stalk. The filaments are attached in one series along the stalk to which they are moderately oblique. On XXXIV in the type the number of branches again reduced to two, which number prevails also on the next four or five segments, after which the branchiæ are simple filaments, continuing as such to the end of the body or obsolete on the four or five last pairs of parapodia. The tentacles are all strongly moniliform with the proximal joints stoutest and narrowest, the tentacles being constricted toward base, widening to end of proximal third or so of length and then moderately narrowing distad, the last joint well rounded; readily broken off at ends; cirratophores very short. A median tentacle retaining seventeen articles reaches to somite VI. A posterior paired tentacle retaining fifteen articles reaches to V. Prostomium with a deep V-shaped median incision in anterior border. Palpi thick, hemispherically rounded. Eye ectad of posterior paired tentacle and caudad of anterior paired tentacle. Nuchal cirri shorter than peris-

tomium; subulate, with smooth outline, with only obscure indications of annulation or none at all, when present these in distal half. Notocirri slenderly conical, segments few and usually only weakly separated. Anterior neurocirri very large and thick with a much reduced terminal article; becoming slender in going caudad. Anal cirri two, attached close together on ventral side of the circular anal opening, stout and showing a division into four or five long articles. The remaining portion of the border of anus shows about a dozen weak crenations. Maxillæ pale excepting anterior and mesal margins of carriers of I, which are black, and the teeth of the other plates, which are brown. Right plate II with about thirteen teeth, of which the most proximal are much smaller than the others; ectal left plate II with about thirteen teeth, of which the most proximal are much smaller than the others; ectal left plate II with long smooth proximal edge distad of which are five or six teeth; unpaired or mesal left plate II with seven teeth; right maxilla III with eleven teeth; left maxilla III also with ten or eleven. Number of segments one hundred and twenty-seven to one hundred and forty.

Length up to 110 mm.; greatest width, 4.5 mm. Body strongly tapering caudad.

14. **Leodice valens** Chamberlin.

Previously known from Mendocino, Cal.

LUMBRINEREIDÆ.

15. **Lumbrinereis erecta** Moore.

Proc. acad. sci. Phil., 1904, p. 490, pl. 37, f. 19-22; pl. 38, f. 23-25.
A common species in this region.

16. **Lumbrinereis zonata** Johnson.

Proc. Boston soc. nat. hist., 1901, p. 408, pl. 9, f. 93-100.
Many small specimens probably the young of this species.

17. **Arabella munda** Chamberlin.

Several specimens agree well with the type, which was taken at Mendocino. In these the right maxilla II is even more strongly dentate than in the type, the number in one specimen being fourteen or fifteen, of which two ordinary teeth lie distad (i. e., ectad) of the large anterior fang-like tooth. In this feature, according to Treadwell's description, differing strongly from *A. attenuata*.

DORVILLEIDÆ.

18. **Dorvilleia moniloceros** (Moore).

Stauronereis moniloceros, Proc. acad. sci. Phil., 1909, p. 256, pl. 8, f. 24-29.

Three specimens. This is the type locality for the species.

ARICIIDÆ.

19. *Nainereis nannobranchia* Chamberlin.

One specimen. Previously known from Mendocino.

20. *Nainereis longa* Moore.

Proc. acad. sci. Phil., 1909, p. 264, pl. 8, f. 38-42.

This is the type locality for this species.

GLYCERIDÆ

21. *Glycera robusta* Ehlers.

Die Borstenwürmer, 1868, p. 656, pl. 24, f. 31, 32.

A rather common species in this region.

22. *Glycera rugosa* Johnson.

Proc. Boston soc. nat. hist., 1901, p. 411, pl. 10, f. 105, 103a.

23. *Glycera nanna* Johnson.

Proc. Boston soc. nat. hist., 1901, p. 411, pl. 10, f. 103, 103a.

CIRRATULIDÆ.

24. *Audouinia spirobranchus* (Moore).

Cirratulus spirobranchus, Proc. acad. sci. Phil., 1904, p. 492, pl. 38, f. 26 and 27.

One specimen of this species, like the type, is near 105 mm. in length but is more robust, having a maximum diameter of 7 mm.

Ambo, gen. nov.

Characterized in bearing special or dorsal branchiæ on a large number of segments beginning with the first setigerous or the one preceding it, with the principal groups on a segment caudad of the first setigerous as in *Audouinia*.

Genotype.—*A. perbranchiata*, sp. nov.

25. *Ambo perbranchiata*, sp. nov.

Characterized by the arrangement and large number of the branchiæ. The principal groups of these occur on the fifth setigerous segment, where they form a dense multiseriate band continuous across dorsum, no mid-dorsal interval being evident. Special branchiæ also occur on about thirty succeeding somites, the two groups, unlike those of the fifth setigerous segment, being widely separated by a middorsal naked area. The number of branchial filaments in each group on these segments from four or five down to two. Branchiæ of the same group often very different in thickness and length, some, possibly regenerating, being very slender and short. A few special or dorsal branchiæ also occur on all the setigerous somites in front of the fifth, there being a single special cirrus on each side of the first setigerous segment. In going caudad from the region where only single cirri occur on each side, the cirri come to occur first

on every other segment on a side and alternately with those of the opposite side; farther caudad two and three or more segments come to intervene between the successive branchiferous ones, the number intervening in posterior region becoming very large. Branchiæ assuming a high dorsal position in going caudad as usual. On the segment preceding the first setigerous one occurs also two slender tentacular cirri, one arising on each side from caudal edge of segment in front of branchiæ of succeeding segment; these tentacular cirri filiform, much more slender and shorter than the typical branchiæ, each reaching to near anterior end of prostomium in the type, but in one paratype much longer. Special branchiæ of principal groups commonly strongly coiled, the longest branchiæ 25 and 30 mm. long. Neuropodia and notopodia widely separated. Crochets of neuropodia stout and black, first occurring on or adjacent to the nineteenth setigerous segment, mostly three or two but sometimes four in each series. Body dark brown with a bluish black pigment tinging anterior end of body; series of dark spots along each side, one spot present at base of each neuropodium and notopodium. The special branchiæ of the principal group typically also colored with this dark pigment except proximally, sometimes annulated, contrasting strongly with the other branchiæ which are yellow.

Number of segments near two hundred and eighty.

Length up to 210 mm.; greatest width, 6 mm.

26. *Ambo convergens*, sp. nov.

Dark colored like *perbranchiata*, but the bluish black pigment diffused over entire body, making this in general a notably deeper color; a deep blackish longitudinal stripe just mesad of bases of neuropodia. Some of branchiæ, particularly those of principal special groups, dark beyond proximal yellow region, the other branchiæ mostly yellow. Principal groups of special branchiæ on the seventh setigerous segment, the group on each side tending at ectal end to encroach on the preceding segment; about twenty-five branchiæ in each group, the groups well separated by a middorsal naked area. On segments in front of this the number of branchiæ additional to the ordinary one on each side from one to three, on segments caudad of the seventh setigerous mostly, but one additional and only single branchiæ occur caudad of about the twenty-ninth setigerous segment. Branchiæ caudad of this region few, mostly widely separated with numerous segments between successive ones. Neuropodial crochets stout and black, first appearing in the twentieth setigerous segment on which and about forty following ones they number two, or very rarely three, on each side, and thereafter but a single one occurring in each neuropodium.

Number of segments near two hundred and sixty-five, these very short and closely crowded.

Length, 75 mm.; greatest width, 6 mm.

CAPITELLIDÆ.

27. *Notomastus pallidior*, sp. nov.

In general form differing from *N. tenuis* Moore and agreeing with *N. angulatus* Chamb. in having the thorax decidedly quadrate rather than terete. No abrupt enlargement at beginning of abdomen, the thorax passing gradually into abdomen. Contrasts strongly with *N. angulatus* in color, being yellow instead of a dense green. Prostomium less strictly conical than in *angulatus*, the palpoidal terminal division abruptly narrower than the basal and distally rounded, the sides in ventral view convex; surface not showing numerous fine points as usual in *angulatus*. Ventral surface of peristomium with a large V-shaped impression formed by two sulci arising from near anterior margin on sides and meeting at an angle on the midventral line at the caudal margin. The peristomium subcylindrical or only moderately narrowed cephalad, at anterior end abruptly much wider than prostomium. Thorax composed of twelve setigerous somites. All these clearly biannulate, the separating sulci strongly marked, especially laterally; a longitudinal furrow along each side. Most thoracic segment showing a vague division of anterior subsegment. Posterior subsegments much shorter than the anterior, in the last segment only half as long. None of the types is complete. The longest one has about one hundred and thirty segments present, of which those in the middle region are longer than wide. The total length of this specimen is 78 mm. with a maximum width of about 1 mm.

Several specimens were taken.

SCALIBREGMIDÆ.

28. *Sclerocheilus pacificus* Moore.

Proc. acad. sci. Phil., 1909, p. 282, pl. 9, f. 59.
One specimen.

TEREBELLIDÆ.

29. *Thelepus crispus* Johnson.

Proc. Boston soc. nat. hist., 1901, p. 428, pl. 17, f. 175-178b.
Common in this region.

SABELLIDÆ.

30. *Pseudopotamilla brevibranchia* Moore.

Proc. acad. sci. Phil., 1905, p. 555, pl. 37, f. 1-7.

Numerous specimens of this species and their tubes are in the collection. Some of these are variant in having the eyes almost or wholly obliterated. One specimen has nine and one ten setigerous somites in place of the usual eight.

31. **Eudistylia polymorpha** (Johnson).

Bispira polymorpha, Proc. Boston soc. nat. hist., 1901, p. 429, pl. 17, f. 179-183 and pl. 18, f. 184-185.

Numerous specimens with their tubes.

SERPULIDÆ.

32. **Serpula vermicularis** Linné.

Serpula columbiana Johnson, Proc. Boston soc. nat. hist., 1901, 29, p. 432, pl. 19, f. 199-204.

SABELLARIIDÆ.

33. **Sabellaria californica** Fewkes.

Bull. Essex Inst.; 1889, 20, p. 130, pl. 7, f. 3 and 4.

Many specimens.

34. **Sabellaria cementarium** Moore.

Proc. acad. sci. Phil., 1906, p. 248, pl. 12, f. 45-51.

Three large specimens.